

CLAIMS

The following is a copy of Applicant's claims that identifies language being added with underlining ("___") and language being deleted with strikethrough ("—"), as is applicable:

1-14 (Canceled)

15. (Previously Presented) An atomizer, comprising:
 - a first reservoir for receiving a fluid;
 - an atomizer actuator disposed in communication with the first reservoir for generating an acoustical pressure wave through the fluid; and
 - a first set of ejectors including at least one ejector for dispensing atomized fluid in response to the acoustical pressure wave.
16. (Previously Presented) The atomizer of claim 15, further comprising:
 - a reactor selected from a reverse-flow micro-reactor and a unidirectional-flow micro-reactor.
17. (Previously Presented) The atomizer of claim 15, wherein the atomizer actuator is selected from a piezoelectric actuator and a capacitive actuator.
18. (Previously Presented) The atomizer of claim 17, wherein the atomizer actuator operates in a range from about 100kHz to 100MHz.
19. (Previously Presented) The atomizer of claim 15, wherein the ejector has a structure for focusing acoustic waves, and wherein the structure is selected from a horn structure and a pyramidal structure.
20. (Previously Presented) The atomizer of claim 15, further comprising:

a second reservoir for receiving the fluid, the atomizer actuator disposed in communication with the first reservoir for generating an acoustical pressure wave through the fluid in the first reservoir and second reservoir; and

a second set of ejectors including at least one ejector for dispensing atomized fluid in response to the acoustical pressure wave disposed, wherein the second set of ejectors is disposed on opposite side of the atomizer actuator as the first set of ejectors.

21. (Previously Presented) The atomizer of claim 15, further comprising at least two sets of ejectors and at least two atomizer actuators for activating the at least two ejector nozzles.
22. (Previously Presented) The atomizer of claim 15, further comprising at least two atomizers.
23. (Previously Presented) The atomizer of claim 22, further comprising a pressure sensor for controlling each atomizer.
24. (Previously Presented) The atomizer of claim 15, wherein the atomizer having at least one set of ejectors disposed on opposing sides of the atomizer actuator.
25. (Previously Presented) The atomizer of claim 15, wherein the at least one ejector nozzle further comprising a structure for focusing an acoustic wave at a tip of the at least one ejector nozzle.
26. (Previously Presented) The atomizer of claim 25, wherein the structure selected from a horn structure and a pyramidal structure.
27. (Previously Presented) The atomizer of claim 26, wherein the horn structure having an internal cavity that expands from a tip according to at least one function selected from a linear function and an exponential function.

28. (Previously Presented) The atomizer of claim 25, wherein the structure formed by at least one of chemical etching and physical machining of a solid substrate.
29. (Previously Presented) The atomizer of claim 15, wherein each of the at least one ejector nozzles being individually activated.
30. (Previously Presented) The atomizer of claim 15, wherein the at least one ejector nozzle having a tip through which an opening may be formed.
31. (Previously Presented) The atomizer of claim 15, further comprising a fuel cell.
32. (Previously Presented) The atomizer of claim 31, wherein the atomizer and the fuel cell are directly integrated.
33. (Previously Presented) The atomizer of claim 15, further comprising:
a storage reservoir for storing the fluid.
34. (Previously Presented) The atomizer of claim 33, wherein the storage reservoir comprising a separate reservoir for delivering the fluid to the atomizer.
35. (Previously Presented) The atomizer of claim 34, wherein the separate reservoir is selected from a disposable cartridge and a refillable cartridge.
36. (Previously Presented) The atomizer of claim 34, wherein the separate reservoir comprising a pressurized cartridge for storing the fluid in a pressurized environment.
37. (Previously Presented) The atomizer of claim 36, wherein the atomizer controls a pressure of the pressurized cartridge using the atomizer actuator.

38. (Previously Presented) The atomizer of claim 15, wherein the fluid is selected from a liquid, a gas, a fluidized polymer, liquid with solid particles, a gas with solid particles, and combinations thereof.
39. (Previously Presented) The apparatus of claim 15, wherein the atomizer is integrated with a membrane in the reactor.
- 40-85. (Canceled)